

BENCHMARKS

VOLUME 5 NUMBER 9

NORTH TEXAS STATE UNIVERSITY

OCTOBER 1984

*BENCHMARKS was produced using Wordstar TM

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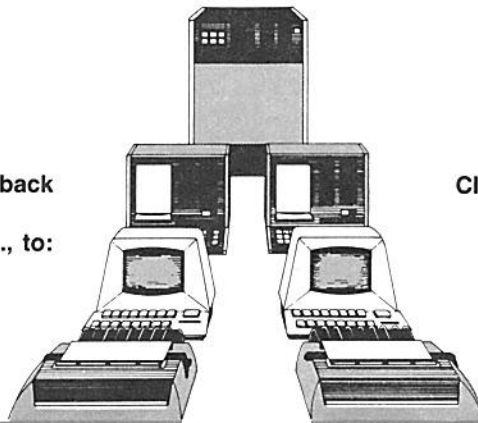
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BENCHMARKS Reader/User feedback is encouraged.

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Services Available to Users of the NTSU Computing Facilities

The NTSU Computing Center is located in the Information Sciences Building, Room 119. Telephone: (817) 565-2324. HELP DESK phone: 565-4050.

INFORMATION AND ID CODES - Carolyn Goodman

BENCHMARKS QUESTIONS/CONTRIBUTIONS, ETC. - Claudia Lynch

STATISTICAL/RESEARCH SUPPORT - George Morrow, Scott Barber,
Dave Molta, Panu Sittiwong

STUDENT PROGRAMMING PROBLEMS - CSCI Department, Room 542A, GAB
BCIS Department, Room 152, BA

JCL & DEBUGGING PROBLEMS - Help Desk

PRE-RESEARCH COUNSELING - George Morrow, Scott Barber, Dave Molta,
Panu Sittiwong

DATA ENTRY & KEYPUNCH - Betty Grise

TEST SCORING & ANALYSIS - Betty Grise

DISK SPACE PROBLEMS - Carolyn Goodman

PASSWORD AND OPERATING SYSTEM PROBLEMS - Help Desk

ADMINISTRATIVE APPLICATIONS - Coy Hoggard

COMMUNICATION/TERMINAL PROBLEMS - Help Desk

PRINTOUT RETRIEVAL - RJE Operators

Fall Computing Hours

Computing facilities will be open during the following hours throughout the Summer Semesters (not applicable to holidays):

Computing Center RJE:	7 a.m. Monday - Midnight Saturday Sunday, Noon - Midnight
ISB 110 Terminal Area:	Monday - Thursday, 7:30 a.m. - Midnight Friday, 7:30 a.m. - 6 p.m. Saturday, 9:00 a.m. - 7 p.m. Sunday, 2 p.m. - 10 p.m.
College of Business:	Monday - Thursday, 8:15 - Midnight Friday, 8:15 - 8 p.m. Saturday, Sunday, 12:15 p.m. - Midnight
Room 550C, GAB:	Monday - Thursday, 8 a.m. - 12 p.m. Friday, 8 a.m. - 10 p.m. Saturday, 10 a.m. - 8 p.m. Sunday, 2 p.m. - 11 p.m.

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*   P R O C E D U R E S      *
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New MUSIC Manual Available

At long last, the MUSIC 5.2 User's Guides are now available for purchase at the University Store. This is the latest edition, and supercedes all previous editions.

Demise of the 1230 Test Scoring Machine

The 1230 test scoring machine is no more. It has been replaced by the new, fast, ultra-modern NCS SENTRY 7001 test scoring machine. This development has several important implications for all computer users:

1. The 1230 test scoring forms (red and white) are now obsolete. New NCS 7001 test scoring forms must be acquired by faculty who wish to use test scoring services. The Computing Center will gladly replace the old forms with the new, if users will bring us their unused test sheets.

2. The NCS 7001 has many new features previously unavailable. These include the ability to upload data captured on the optical mark forms to OS/MVS data sets on either the AS/8040 or the AS/6650. This will enable instructors to use SAS, SPSSX, BMDP, or any other program to analyze their test results. In addition, researchers who use the optical mark forms to collect data will be able to create data sets for analysis with ease.

Those who need further information about the NCS 7001 optical mark reader and its capabilities should contact George Morrow here in the Computing Center (ext. 3882). Questions about test scoring of faculty evaluations should be directed to Betty Grise (ext. 3894).

VAX Upgrades and Information

By Kim Stickney, VAX System Manager

There have been recent upgrades to the two VAX/VMS systems which should improve resources and performance. Each system has acquired an additional 2 megabytes of memory, doubling the previous amount. This will result in quicker user response time in most cases. Also, eight terminal ports on each machine have been replaced with ABLE/VMZ32 16-port units which operate in a direct memory access mode for data and are interrupt-driven for modem signals. This should also improve response and throughput

for most users.

In coordination with similar programs on the 8040 and 6650 systems, a USERID utility is available which enables a user to easily determine someone's user identification code from their name or any fragment thereof. You need only type **USERID** and you will see the prompt **name?**.

A newer version of the Eunice UNIX emulator was installed which more truly emulates UNIX and gets rid of numerous bugs. Users may also run UNIX programs directly from VMS by making a local command definition. This can be done interactively, or by editing your LOGIN.COM file. For example, to invoke the C compiler directly from VMS, you would type this line, or put it in LOGIN.COM:
\$cc == "\$fin:cc cc"

Other UNIX commands may be similarly defined. Note that the name of the program desired is specified as the first argument to the program. It should be realized, of course, that very UNIX-specific things such as pipes and I/O redirection will not work from VMS.

Madron Attends Conference

Tom Madron, Manager of Computer Systems, attended the National Electronics Conference NCF/84 September 24-26 in Rosemont, Illinois. While there, Dr. Madron chaired a panel discussion and presented a paper entitled "Local Area Network for Microcomputers."

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Backup Schedule for OS/MVS

OS/MVS disk packs (academic and administrative) are backed up daily, Tuesday through Saturday, from 4-6:30 a.m., and Sunday from Midnight to 3 a.m. A backup of all the operating systems and their contents is done once every two weeks at some low activity period over a weekend.

NAS/8040 Performance Statistics for September

SYSTEM	SCHEDULED OPERATING HOURS	PLANNED MAINT. HOURS	PLANNED PRODUCTION HOURS	UNPLANNED MAINT. HOURS	PRODUCTION HOURS ACHIEVED	SYSTEM UPTIME
VM/SP2	720	0.98	719.02	0.48	718.54	99.9%
MUSIC	720	17.76	702.24	1.24	701.00	99.8%
MVS/JES2	720	1.23	718.77	0.95	717.82	99.9%
COMPLETEA	720	1.52	718.48	1.70	716.78	99.8%

CPU availability equals approximately 100% uptime.

System Uptime=(Production Hrs Achieved)/(Planned Production Hrs)

Production Hrs Achieved = (Planned Production)-(Unplanned Maint.)

Scheduled Operating Hrs = (Planned Maint.) + (Planned Production)

MUSIC Planned Maintenance Hours include 16.48 hrs system backup.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was unavailable for scheduled operation. Lost productivity hours were contributed to by the following key causes:

Miscellaneous

1. Undetermined Causes for Systems Restarts	0.57 HOURS
2. Install VM/370 Release 3.1	1.52
3. VM/SP3 System Tuning /Improvements	1.15
TOTAL	3.24 HOURS
GRAND TOTAL	3.24 HOURS

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Dialing Up NTSU Computers Over the Telephone

Phone numbers for the local area network are:

300/1200 BAUD: (817) 565 - 3300
3499

300 BAUD: D/FW METRO 429 - 6006

The numbers that will accept either 300 or 1200 baud communications have an autobaud feature that requires the user to hit the <RETURN> key repeatedly until the receiving modem can

determine the appropriate baud rate. The METRO telephone number is for 300 baud communications only. After a communications link has been successfully established, the user will receive the # prompt. At this point, it will be necessary to issue the appropriate CALL command to connect with a computer.

CALL 8040 will connect with the 8040
 (on which you can access MUSIC)
 CALL 3270 will connect with the 8040 through the 3270
 protocol converter
 CALL A780 will connect with VAX system A
 CALL B780 will connect with VAX system B
 CALL 2000 will connect with the HP-2000 computer

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*   M U S I C   *
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MUSIC Backup Hours

A message will be sent to all users signed on to MUSIC approximately 10 minutes before backups are begun. It will be in the form * * MUSIC SHUT DOWN AT xxxx AM - SCHEDULED BACKUP *. To find out the backup hours while signed on to MUSIC, enter HELP HOURS. The following backup schedule is currently in effect:

Tuesday	3 a.m. (for about 3 hours)	Weekly backup
Wednesday - Saturday	4 a.m. (for about 2 hours)	Daily backup
Saturday	Midnight (for about 2 hours)	Daily backup

BANNER: A New Utility

A new MUSIC utility, BANNER, creates a file of banner characters (i.e. very large letters) from a string of text. This file can then be printed on a printing terminal such as the LA100, or routed to the system printers through the PTPCH program. Type HELP BANNER when you receive the *GO prompt for more information.

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*   V A X   *
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VAX Backup Schedule

Incremental backups of both VAX systems are performed Monday through Thursday at 5 p.m. Any files that have been created or changed are backed up. Users do not have to log out, but any files open at the time of the backup will NOT be backed up.

Full backups of both systems are done every Friday at 5 p.m. Again, users do not have to log out, but any files that are open will NOT be backed up.

A "stand alone" backup of both systems is done on the last working day of the month. During this time, all system software, as well as user files, are backed up. The systems must be taken down for this backup, which will usually not last more than 1/2 hour. All users that are logged on will be warned of the impending backup, and must log out.

NOTE: No backups are taken on the weekends. Requests for restoration of files should be made via MAIL to the username OPERATOR.

VAX Documentation Explained

There are several sources of information and documentation on the VAX systems at NTSU. Some require logging onto a VAX to access online information via the HELP command; others are printed and free of charge from the Computing Center. Yet others may be purchased at the University Bookstore, or ordered directly from Digital Equipment Corporation, the manufacturer of VAX computers. In this article we shall describe printed documentation of interest to VAX users at NTSU.

Public Access terminal areas which have VAX manuals available for reference are in the General Academic Building 5th floor, Information Sciences Building room 110, and BCIS. Many manuals are available; you should always look at the public manuals first before considering purchasing manuals, especially to verify what it is you really need. More will be said below about DEC manuals.

The following reference cards are available free of charge from the Computing Center office in the Information Sciences Building:

Pocket Tutorial on the VMS Operating System (printed card) -- describes basics of logging onto NTAVAX and NTBAX systems, elementary commands, invoking Computer Aided Instruction programs. A must for all beginners.

EDT Keypad Editing (photocopy handout) -- diagrams of VT100 and VT52 keypads to be used with the EDT screen editor. This is good for users of MICROTERM 740 (VT100 type) and MIME2A (VT52 type) terminals. Also contains command summary information for the EDT editor.

EDT Keypad for Televideo (handout) -- this explains the mapping of the VT100 EDT keypad editor functions to the wierd Televideo 970 keypad. A must for 5th floor lab and ISB 110 users.

Digital Standard Runoff (handout) -- explains the basics of the text formatter RUNOFF (sometimes called DSR). This formatter utilizes embedded formatting commands, similar in many ways to Waterloo Script. Several pages long.

DECUS C Language System Compiler and Library Software Support Manual (handout) -- left over from a class handout, this document explains about the DECUS cross-compiler for the C language. This compiler generates code for PDP-11 micros and minis; it does not generate VAX native code. For most C programming, you should use instead the Eunice/UNIX C compiler, not this one.

An order was placed with the University Store for a number of DEC manuals. These are expensive, and most of them would best be purchased by a department and shared with several users. A few, such as the VAX/VMS Primer and the PASCAL Primer, are excellent tutorials of a general introductory nature and are also less expensive. The following manuals are available in the Univeristy Store:

Utilities Reference Manual -- describes SET, LIBRARY, MONITOR, MAIL, PHONE, and also a number of system management utilities not of interest to most users. Serious software development users will benefit from LIBRARY and SET information, while those interested in monitoring VAX performance will learn a lot from MONITOR. Inter-user communication is explained via MAIL and PHONE.

Command Language User's Guide -- details about the Digital Command Language (DCL) which is the user interface to VMS, the operating system. Very thorough, but expensive. A must for academic departments using VAX/VMS.

Guide to Using Command Procedures -- valuable information on the VMS equivalent of JCL, but much easier to use. Command procedures are very powerful and allow tremendous flexibility, custom definition of commands, tailored compile-load-go procedures, and the like. For example, it would possible to make VMS look like MUSIC or practically any other operating system,

using DCL and command procedures. A must for all serious users, and not too expensive.

EDT Editor Manual -- details on EDT. This editor is very flexible and easy to use. It may be used as a screen editor with VT100 or VT52 type terminals, or as a line editor with any dumb CRT or hardcopy terminal.

Digital Standard Runoff User's Guide--details on RUNOFF text formatter.

Routine Library User's Guide, Reference Manual (2 books) -- explains the vast VMS library which can be linked to from many languages. Special functions available including math, string manipulation, screen formatting, esoteric file functions, parsing, data type conversion, time, system information, and more.

Guide to Creating Modular Procedures--how to design and code procedures that conform to the VAX-11 procedure calling standard; creating libraries, shareable images and shareable image libraries. Esoteric and advanced.

MACRO User's Guide, Language Reference Manual (2 books), Programming Card (reference card) -- the VAX/VMS assembly language. Note that most VAX compilers support an option to show the actual assembly language generated by the compiler; this is a boon to those learning assembly language.

Linker Reference Manual -- the "linking loader" or "link editor" for the VAX. It is even possible to link together object modules from several different language compilers.

Symbolic Debugger Reference Manual -- this symbolic debugger allows you to set breakpoints and watchpoints, to see exactly what your program is doing at execution time.

System Services Reference Manual -- the lowest-level code available to the VAX programmer is explained here. Users writing extensions to other languages (ADA, MODULA) or writing time-critical code will want this.

I/O User's Guide -- certain device drivers are explained, as well as ways to get special behavior out of certain devices (such as terminals).

VAX/VMS Primer, PASCAL Primer (2 short books) -- tutorials, good introductions to these subjects. The PASCAL primer is useful in learning the language generally, and contains much that is valid in non-VAX implementations.

Languages: the remaining books available cover the PASCAL, FORTRAN, BASIC and COBOL languages. There are always at least two books on each language: the DEC tradition is to publish a Language Reference and a User's Guide. The former has the details of the language; the latter tells you how to use it on the particular system (VAX in this case). BASIC has in addition a book entitled BASIC on VAX/VMS systems, a sort of general overview.

Finally, a word about UNIX. The Research VAX administered by the Computer Science Department runs the native UNIX operating system. UNIX manuals are available in most of the public terminal areas. There are plans for the Computing Center to issue UNIX-oriented handouts which specifically address the peculiarities of the UNIX emulator called Eunice, which runs under the VMS operating system on the two VAX/VMS systems. In the meantime, the UNIX manuals serve as the primary source of UNIX-related information.

Documentation on other DEC operating systems is maintained by certain departments primarily for their own use. The Physics department maintains some information on the RSX11M operating system, to support their PDP-11/23 system. VAX operations has documentation on the RT11 operating system, used for VAX operations systems support.

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HP-2000 Backup Schedule

Routine system backups are scheduled to be performed at the following times:

8 a.m. Monday through Friday for approximately 20 minutes;
4 p.m. Friday for approximately 1.5 hours.

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*   A D M I N I S T R A T I V E   *
*   C O M P U T I N G             *
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NAS/6650 Performance Statistics for September

SYSTEM	SCHEDULED OPERATING HOURS	PLANNED MAINT. HOURS	PLANNED PRODUCTION HOURS	UNPLANNED MAINT. HOURS	PRODUCTION HOURS ACHIEVED	SYSTEM UPTIME
MVS/JES2	720	0.00	720.00	2.00	718.00	99.7%
COMPLETEA	321	0.00	321.00	3.32	317.68	99.0%
ADABASA	720	10.36	709.60	4.20	705.44	99.4%

CPU availability equals approximately 100% uptime. Please consult the NAS/8040 Performance Summary for an explanation of cell entries. It can be found under the OPERATIONS section of this newsletter.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was unavailable for scheduled operation. Lost productivity hours were contributed to by the following key causes:

CPU, Tape, and Disk Subsystems

1. Console Keyboard Failure	1.23 HOURS
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Miscellaneous

1. Underterminated Causes for Systems Restarts	0.35 HOURS
2. SIMS Database Tuning	2.00
3. Student Records DASD File Maintenance	1.03
4. MVS/JES2 System Tuning/Improvements	1.08
5. ADABASA Program Tuning/Improvements	0.68
5. COMPLETA Program Tuning/Improvements	8.14

TOTAL	8.14 HOURS
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GRAND TOTAL	9.37 HOURS
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Get a "Subscription" to BENCHMARKS

BENCHMARKS is a vital link between the NTSU Computing Center and the users of our facilities. It is important for all users of the computing facilities to maintain a file of these newsletters because they contain materials which will periodically update existing documents as well as information and suggestions on uses of OS/MVS, MUSIC, the VAX 11/780's, the HP-2000, and other resources available to NTSU students and faculty. To facilitate the dispersal of BENCHMARKS, *** FREE *** subscriptions are now available. To receive yours, send the following information to us either by "snail mail" (the post office or campus mail) or electronically, through the MAIL facility on MUSIC.

Name _____

Mailing Address _____

PLEASE GIVE A CAMPUS ADDRESS (NOT BOX) IF POSSIBLE! - It's
Cheaper !!

PLEASE RETURN TO:

Academic Computing Services
The Computing Center
NT Box 13495
North Texas State University
Denton, TX 76203